

CLAIMS:

1. A multiwall sheet comprising:

a first sheet having a first side and a second side, wherein the first sheet comprises a thermoplastic polymer and an electrically conductive filler, and wherein the first side of the first sheet is disposed upon a first side of a plurality of ribs; and

a second sheet having a first side and a second side, wherein the second sheet comprises a thermoplastic polymer and an electrically conductive filler, wherein the first side of the second sheet is disposed upon a second side of the plurality of ribs, and wherein the first side of the plurality of ribs is opposed to the second side of the plurality of ribs.

2. The multiwall sheet of Claim 1, wherein the thermoplastic polymer comprises a blend of thermoplastic polymers.

3. The multiwall sheet of Claim 2, wherein an electrically conductive filler is added to a single phase of the blend of thermoplastic polymers.

4. The multiwall sheet of Claim 1, wherein the thermoplastic polymer is polyacetal, polyacrylic, polycarbonate, polystyrene, polyester, polyamide, polyamideimide, polyarylate, polyarylsulfone, polyethersulfone, polyphenylene sulfide, polyvinyl chloride, polysulfone, polyimide, polyetherimide, polytetrafluoroethylene, polyetherketone, polyether etherketone, polyether ketone ketone, polybenzoxazole, polyoxadiazole, polybenzothiazinophenothiazine, polybenzothiazole, polypyrazinoquinoxaline, polypyromellitimide, polyquinoxaline, polybenzimidazole, polyoxindole, polyoxoisindoline, polydioxoisindoline, polytriazine, polypyridazine, polypiperazine, polypyridine, polypiperidine, polytriazole, polypyrazole, polypyrrolidine, polycarborane, polyoxabicyclononane, polydibenzofuran, polyphthalide, polyacetal, polyanhydride, polyvinyl ether, polyvinyl thioether, polyvinyl alcohol, polyvinyl ketone, polyvinyl halide, polyvinyl nitrile, polyvinyl ester, polysulfonate, polysulfide, polythioester, polysulfone, polysulfonamide, polyurea, polyphosphazene, polysilazane, or a combination comprising at least one of the foregoing thermoplastic polymers.

5. The multiwall sheet of Claim 1, wherein the thermoplastic polymer is bisphenol A polycarbonate, copolyestercarbonate, or a blend of polyester with polycarbonate.

6. The multiwall sheet of Claim 5, wherein the polyester is a cycloaliphatic polyester, a polyarylate or a combination of a cycloaliphatic polyester with a polyarylate.

7. The multiwall sheet of Claim 1, wherein the electrically conductive filler is carbon black, carbon nanotubes, metallic fillers, metallic conductive fillers, non-metallic conductive fillers, non-conductive fillers coated with metals, or a combination comprising at least one of the foregoing fillers.

8. The multiwall sheet of Claim 1, wherein the carbon nanotubes are single wall carbon nanotubes, multiwall nanotubes, vapor grown carbon fibers, or a combination comprising at least one of the foregoing carbon nanotubes.

9. The multiwall sheet of Claim 1, wherein the first and/or the second sheet have a surface resistivity of less than or equal to about 1×10^{11} ohm/sq.

10. The multiwall sheet of Claim 1, wherein the thickness of the sheet is about 1 to about 50 millimeters, and the distance between successive ribs is about 2 to about 50 millimeters and wherein the multiwall sheet has a surface resistance of less than or equal to about 1×10^{11} ohms/sq, while having a tensile strength of greater than or equal to about 25 megapascals, a notched Izod impact strength of greater than or equal to about 4 kilojoules/square meter and a flex modulus of greater than or equal to about 0.4 Gigapascals.

11. The multiwall sheet of Claim 1, wherein the first and/or the second sheet further comprise additives, and wherein the additives are antistatic agents, ultraviolet absorbers, antioxidants, flame retardants, anti-drip agents, anti-ozonants, thermal stabilizers, anti-corrosion additives, impact modifiers, mold release agents, flow promoters, pigments, dyes or a combination comprising at least one of the foregoing additives.

12. The multiwall sheet of Claim 1, wherein the first sheet and/or the second sheet are fused with the ribs.

13. A method of manufacturing an electrically conductive multiwall sheet comprising:

melt blending a thermoplastic polymer with an electrically conductive filler to form an electrically conductive composition; and

forming the electrically conductive composition into a multiwall sheet, wherein the multiwall sheet comprises a first sheet having a first side and a second side, wherein the first sheet comprises a thermoplastic polymer and an electrically conductive filler, and wherein the first side of the first sheet is disposed upon a first side of a plurality of ribs; and a second sheet having a first side and a second side, wherein the second sheet comprises a thermoplastic polymer and an electrically conductive filler, wherein the first side of the second sheet is disposed upon the second side of the plurality of ribs, and wherein the first side of the plurality of ribs is opposed to the second side of the plurality of ribs.

14. The method of Claim 13, wherein the melt blending and the forming are performed in a single device.

15. The method of Claim 14, wherein the single device is an extruder.

16. The method of Claim 13, further comprising depositing additional electrically conductive layers on the second surface of the first and/or second sheet.

17. The method of Claim 13, further comprising thermoforming, vacuum molding, blow molding, or shaping the multiwall sheet.

18. The method of Claim 13, wherein additional sheets are disposed parallel to the first and second sheet, and wherein the additional sheets are located in between the first sheet and the second sheet.

19. A method of manufacturing an electrically conductive multiwall sheet comprising:

forming a thermoplastic polymer into a multiwall sheet, wherein the multiwall sheet comprises a first sheet having a first side and a second side, wherein the first side of the first sheet is disposed upon a first side of a plurality of ribs; and a second sheet having a first side and a second side, wherein the first side of the second sheet is disposed upon the second side of the plurality of ribs, and wherein the first side of the plurality of ribs is opposed to the second side of the plurality of ribs; and

coating the second side of the first and/or second sheet with a conductive coating having a surface resistivity of less than or equal to about 10^{11} ohm/sq.

20. The method of Claim 19, wherein the conductive coating comprises indium tin oxide.

21. The method of Claim 19, wherein the forming is accomplished by coextrusion.

22. A method for manufacturing a multilayered multiwall sheet comprising:

co-extruding a multilayered multiwall sheet comprising a first sheet having a first side and a second side, wherein the first sheet comprises a thermoplastic polymer and an electrically conductive filler, and wherein the first side of the first sheet is disposed upon a first side of a plurality of ribs; and a second sheet having a first side and a second side, wherein the second sheet comprises a thermoplastic polymer and an electrically conductive filler, wherein the first side of the second sheet is disposed upon the second side of the plurality of ribs, and wherein the first side of the plurality of ribs is opposed to the second side of the plurality of ribs.

23. The method of Claim 22, wherein the thermoplastic polymer is bisphenol A polycarbonate, copolyestercarbonate, or a blend of polyester with polycarbonate.

24. The method of Claim 23, wherein the polyester is a cycloaliphatic polyester, a polyarylate or a combination of a cycloaliphatic polyester with a polyarylate.

25. The method of Claim 22, further comprising calendaring the multilayered multiwall sheet.

26. An article manufactured by the method of Claim 13.

27. An article manufactured by the method of Claim 19.

28. An article manufactured by the method of Claim 22.